CLAIM AMENDMENTS:

1. (Original) A polishing apparatus comprising:

a rotating unit, which rotates an object under polish,

an abrasive tape, which polishes a surface of the object under polish,

a tape head, which presses said abrasive tape against the surface of the object under polish,

a tape supply unit, which supplies said abrasive tape to said tape head,

a tape take-up unit, which takes-up said abrasive tape from said tape head, and

a tape head pressuring unit, which pressures said tape head using the electromagnetic force.

2. (Currently Amended) The polishing apparatus according to claim 1, wherein said tape head ~~consists of~~ comprises a roller.

3. (Original) The polishing apparatus according to claim 1, wherein said tape head pressuring unit has a swing arm, which supports said tape head vertically, and a voice coil motor, which pressures said tape head supported by said swing arm.

4. (Currently Amended) The polishing apparatus according to claim 1, wherein said tape head pressuring unit has a linear-type voice coil motor ~~whose~~ with a movable portion that moves in a direction towards the object under polish ~~moves straight~~, and

wherein said tape head is connected to the movable portion of said linear-type voice coil motor.

5. (Currently Amended) The polishing apparatus according to claim 1, wherein said tape head pressuring unit has a rotary-type voice coil motor ~~whose~~ with a movable portion that rotates, and

wherein said tape head is connected to the movable portion of said rotary-type voice coil motor.

6. (Currently Amended) A polishing method comprising the steps of:

rotating an object under polish,

supplying and taking-up an abrasive tape to/from a tape head, and

pressing said abrasive tape against a surface of the object under polish by pressuring said tape head using ~~the~~ electromagnetic force.

7. (Currently Amended) The polishing method according to claim 6, wherein said tape head is pressured in ~~the~~ a direction ~~almost~~ approximately right-angled to the direction of the tension applied to said abrasive tape due to the supply and take-up of said abrasive tape.

8. (Original) The polishing method according to claim 6, wherein the object under polish is supported and rotated such that the surface to be polished is arranged vertically.

9. (Original) The polishing method according to claim 6, wherein said abrasive tape is recovered below the object under polish.

10. (Original) The polishing method according to claim 6, wherein a voice coil motor is utilized in generating a pressuring force for pressuring said tape head, and

said voice coil motor is driven by supplying a certain voltage.

11. (Original) A polishing apparatus comprising:

a rotating unit, which rotates an object under polish,

an abrasive tape, which polishes a surface of the object under polish,

a tape head, which presses said abrasive tape against the surface of the object under polish,

a tape supply unit, which supplies said abrasive tape to said tape head,

a tape take-up unit, which takes-up said abrasive tape from said tape head,

a tape head pressuring unit, which pressures said tape head using a voice coil motor,

a sensor, which detects a vibration of said voice coil motor, and

a control circuit, which supplies an electric signal that causes said voice coil motor to generate a certain electromagnetic force and adjusts said electric signal depending on a detection signal from said sensor.

12. (Currently Amended) A polishing apparatus comprising:

a rotating unit, which rotates an object under polish,

an abrasive tape, which polishes a surface of the object under polish,

a tape head, which presses said abrasive tape against the surface of the object under polish,

a tape supply unit, which supplies said abrasive tape to said tape head,

a tape take-up unit, which takes-up said abrasive tape from said tape head,

a tape head pressuring unit, which pressures said tape head using a voice coil motor,

a sensor, which detects a vibration of said voice coil motor, and

a control circuit, which adds a high frequency signal to an electric signal that causes said voice coil motor to generate a certain electromagnetic force, supplies ~~them~~ the combined signal to the voice coil motor and adjusts said electric signal depending on a detection signal from said sensor.

13. (Original) A polishing apparatus comprising:

a rotating unit, which rotates an object under polish,

an abrasive tape, which polishes a surface of the object under polish,

a tape head, which presses said abrasive tape against the surface of the object under polish,

a tape supply unit, which supplies said abrasive tape to said tape head,

a tape take-up unit, which takes-up said abrasive tape from said tape head,

a voice coil motor, which pressures said tape head,

a pressure sensor, which detects a pressuring force of said voice coil motor, and

a feedback control circuit, which generates a drive signal for said voice coil motor and adjusts said drive signal depending on a pressure detection signal from said pressure sensor.

14. (Currently Amended) The polishing apparatus according to claim 13, wherein said feedback control circuit has a target value generating circuit, which generates a signal indicating a target pressuring force, a differential amplifier and a VCM drive circuit, and

said differential amplifier receives at its inputs the signal from said target value generating circuit and a pressure detection signal from said pressure sensor and outputs a differential signal to said VCM drive circuit.

15. (Currently Amended) A polishing apparatus comprising:

a rotating unit, which rotates an object under polish,

an abrasive tape, which polishes a surface of the object under polish,

a tape head, which presses said abrasive tape against the surface of the object under polish,

a tape supply unit, which supplies said abrasive tape to said tape head,

a tape take-up unit, which takes-up said abrasive tape from said tape head,

a voice coil motor, which moves and pressures said tape head,

a position sensor, which detects a position of said tape head,

a pressure sensor, which detects a pressuring force of said voice coil motor,

~~the~~ a first feedback control circuit, which generates a drive signal for said voice coil motor and adjusts said drive signal depending on a position detection signal from said position sensor,

~~the~~ a second feedback control circuit, which generates a drive signal for said voice coil motor and adjusts said drive signal depending on a pressure detection signal from said pressure sensor, and

a selector, which selects said first and second feedback circuits alternatively.

16. (Original) The polishing apparatus according to claim 15, wherein said first feedback control circuit has the first target value generating circuit, which generates a signal indicating a target position, the first differential amplifier and a VCM drive circuit,

said second feedback control circuit has the second target value generating circuit, which generates a signal indicating a target pressuring force, and the second differential amplifier, and shares said VCM drive circuit with said first feedback control circuit,

said first differential amplifier inputs the signal from said first target value generating circuit and a position detection signal from said position sensor and outputs the first differential signal to said VCM drive circuit through said selector, and

said second differential amplifier inputs the signal from said second target value generating circuit and a pressure detection signal from said pressure sensor and outputs the second

differential signal to said VCM drive circuit through said selector.

17. (Original) The polishing apparatus according to claim 16, wherein said position sensor is a linear displacement sensor,

said first and second target value generating circuits are a logic control circuit generating digital data,

said logic control circuit inputs the position detection signal from said linear displacement sensor through a A/D converter and outputs the signal indicating the target position to said first differential amplifier through a D/A converter, and

said logic control circuit inputs the pressure detection signal from said pressure sensor through a A/D converter and outputs the signal indicating the target pressuring force to said second differential amplifier through a D/A converter.

18. (Original) A polishing method comprising the steps of:

rotating an object under polish,

supplying an abrasive tape to a tape head,

driving a voice coil motor by generating a signal indicating a target pressuring force so as to pressure said tape head by said voice coil motor,

detecting a pressuring force of said voice coil motor, and

pressing said abrasive tape against a surface of the object under polish by controlling said voice coil motor with a pressure detection signal fed back to the signal indicating the target pressuring force.

19. (Currently Amended) The polishing method according to claim 18, wherein said voice coil motor is driven by generating the signal, which rises gradually up to a final target pressuring force, depending on the pressure detection signal and controlled by <u>then</u> generating the signal indicating the final target pressuring force ~~after that~~.

20. (Currently Amended) A polishing method comprising the steps of:

rotating an object under polish,

supplying an abrasive tape to a tape head,

driving a voice coil motor by generating a signal indicating ~~the~~ a first target position so as to move said tape head by said voice coil motor,

detecting a position of said tape head,

moving said tape head toward a surface of the object under polish and stopping it at a point, which is close to the surface of the object under polish, by controlling said voice coil motor with a position detection signal fed back to the signal indicating the first target position,

driving said voice coil motor by generating a signal indicating ~~the~~ a second target position so as to move said tape head by said voice coil motor,

detecting the position of said tape head,

making said abrasive tape to touch the surface of the object under polish by controlling said voice coil motor with the position detection signal fed back to the signal indicating the second target position,

driving said voice coil motor by generating a signal indicating a target pressuring force so as to pressure said tape head by said voice coil motor,

detecting a pressuring force of said voice coil motor, and

pressing said abrasive tape against the surface of the object under polish by controlling said voice coil motor with a pressure detection signal fed back to the signal indicating the target pressuring force.

21. (Currently Amended) The polishing method according to claim 20, wherein said tape head is moved at high speed until the point, which is close to the surface of the object under polish, and

said tape head is moved at low speed when making said abrasive tape ~~to~~ touch the surface of the object under polish.

22. (Currently Amended) )The polishing method according to claim 20, wherein the feedback control based on the signal indicating the target position and the position detection signal is switched to the feedback control based on the signal indicating the target pressuring force and the pressure detection signal when said abrasive tape touches the surface of the object

under polish or ~~just before that~~ just prior to when said abrasive tape touches the surface of the object under polish

23. (Currently Amended) A manufacturing method for a magnetic disk comprising the steps of:

rotating the magnetic disk or its substrate,

supplying an abrasive tape to a tape head, and

pressing said abrasive tape against a surface of the magnetic disk or its substrate by pressuring said tape head using ~~the~~ electromagnetic force so as to polish the surface of the magnetic disk or its substrate.

24. (Original) A manufacturing method for a magnetic disk comprising the steps of:

rotating the magnetic disk or its substrate,

supplying an abrasive tape to a tape head,

driving a voice coil motor by generating a signal indicating a target pressuring force so as to pressure said tape head by said voice coil motor,

detecting a pressuring force of said voice coil motor, and

pressing said abrasive tape against a surface of the magnetic disk or its substrate by controlling said voice coil motor with a pressure detection signal fed back to the signal indicating the target pressuring force so as to polish the surface of the magnetic disk or its substrate.

25. (Original) A manufacturing method for a magnetic disk comprising the steps of:

rotating the magnetic disk or its substrate,

supplying an abrasive tape to a tape head,

driving a voice coil motor by generating a signal indicating ~~the~~ a first target position so as to move said tape head by said voice coil motor,

detecting a position of said tape head,

moving said tape head toward a surface of the magnetic disk or its substrate and stopping it at a point, which is close to the surface of the magnetic disk or its substrate, by controlling said

voice coil motor with a position detection signal fed back to the signal indicating the first target position,

driving said voice coil motor by generating a signal indicating ~~the~~ a second target position so as to move said tape head by said voice coil motor,

detecting the position of said tape head,

making said abrasive tape to touch the surface of the magnetic disk or its substrate by controlling said voice coil motor with the position detection signal fed back to the signal indicating the second target position,

driving said voice coil motor by generating a signal indicating a target pressuring force so as to pressure said tape head by said voice coil motor,

detecting a pressuring force of said voice coil motor, and

pressing said abrasive tape against the surface of the magnetic disk or its substrate by controlling said voice coil motor with a pressure detection signal fed back to the signal indicating the target pressuring force so as to polish the surface of the magnetic disk or its substrate.